REMARKS

By this amendment, claims 1, 9, 11, and 12 have been amended. No claims have been canceled. Hence, claims 1-28 are pending in the Application.

SUMMARY OF REJECTIONS/OBJECTIONS

Claims 1 - 5 and 10 – 19 and 24 – 28 are rejected under 35 U.S.C. 102(e) as being anticipated by Harumi A. Kuno and Elke A Rundersteiner,"Using Object-Oriented Principles to Optimize Update Propagation to Materialized Views", herein Harumi.

Claims 6 – 9 and 20 – 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Harumi in view of U.S. Patent No. 6,272,502, hereafter Lieuwen.

Claim 1

Claim 1 as amended, recites:

a "database management system creating" "a materialized view that contains
   objects of an object class";
"wherein said object class defines attributes";
"wherein the step of creating said materialized view includes creating a container
   table that includes corresponding columns that correspond to said
   attributes and that hold the values of said attributes."

To anticipate a claim, the reference must teach every element of the claim. (MPEP 2131) The Office Action alleges that Harumi anticipates claim 1. However, Harumi does not teach every element of claim 1. For example, claim 1, as amended, requires creating a container table for a materialized view, where the container table contains columns that hold values of objects contained by the materialized view. Applicant has thoroughly reviewed Harumi and has not found any passage that discloses

or suggests in any way a container table that contains columns that hold values for attributes of objects contained by a materialized view.

Before the present amendment, claim 9 expressly recited a similarly worded feature. With respect to that limitation, the Office Action alleges that the step of " creating a container that includes corresponding columns that correspond to said attributes and that hold values for said attributes" is a step disclosed by various passages of Harumi. (section by 3rd paragraph) This allegation is clear error.

The first passage cited is page 311, section 3, paragraph 2, which follows.

> Objects that share a common structure and behavior are grouped into sets, denoted classes. We use the term type to indicate the set of applicable property functions shared by all object-instances of the class. Let C be the set of all classes in a database. A class Ci ... C has a unique class name, a type, and a set membership denoted by extent (Ci)

The above passage is a general description of the relation of classes and objects. The passage states that a class has a name, type, and set membership. The passage states that object instances of a class share the same type i.e. properties and functions. The fact that a class has a name, type, and set membership and that object instances of the class share the type does not suggest in any way much less teach of a container table that is created for a materialized view to hold values for attributes of the object contained by the materialized view.

The other passage cited is section 3.1. This passage not only fails to disclose or suggest in any way the feature of a container table created for a materialized view to hold values for attributes of the objects, it teaches a principle violated by this feature. Specifically, the passage teaches to create for a materialized view a data structure to store references to objects, and, evenmore, explicitly teaches against creating for the materialized view a data structure to store the objects contained by the materialized view.

We define a materialized virtual class as a virtual class that caches its extent rather than computing it upon access. **We do not replicate objects that belong to materialized virtual classses, but instead store references to them.** We refer to this feature as membership materialization. As it depends upon oid support, membership materialization is unique to the object-oriented model. This feature reduces the storage overhead of materialization as well as the time and effort required for view update propagation (demonstrated in Sections 4 and 5). (emphasis added)

As shown above, a principle of Harumi is that the objects of a materialized view are not stored in some data structure for the materialized view. Rather only references to the objects are stored!

Furthermore, Harumi further teaches that this principle is fundamental to reducing storage overhead and time and effort for updating a view. Note that the title of Harumi expressly recites the notion of optimizing update propagation to materialized views. The feature of creating a data structure for a materialized view and using it to store values for attributes of the objects rather than store references to the objects is a feature that violates a principle of operation of Harumi – one that is fundamental to achieving the very benefits for which Harumi was entitled.

Not only does Harumi fail to teach creating a container table for a materialized view and using it to hold values for attributes of the objects, so does Lieuwen. In fact, the Examiner has not alleged that Liewen teaches this feature.

Based on the foregoing, the cited art fails to teach at least one feature of claim 1. Therefore, the cited references fails to teach all the elements of claim 1. Therefore, claim 1 is patentable. Reconsideration and allowance of claim 1 is respectfully requested.

Remaining Pending Claims

The pending claims not discussed so far are dependant claims that depend on an independent claim that is discussed above. Because each of the dependant claims include

the limitations of claims upon which they depend, the dependant claims are patentable for at least those reasons the claims upon which the dependant claims depend are patentable. Removal of the rejections with respect to the dependant claims and allowance of the dependant claims is respectfully requested. In addition, the dependent claims introduce additional limitations that independently render them patentable. Due to the fundamental difference already identified, a separate discussion of those limitations is not included at this time.

For the reasons set forth above, Applicant respectfully submits that all pending claims are patentable over the art of record, including the art cited but not applied. Accordingly, allowance of all claims is hereby respectfully solicited.

The Examiner is respectfully requested to contact the undersigned by telephone if it is believed that such contact would further the examination of the present application.

Respectfully submitted,

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Dated: August _22_ , 2005

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on   August 22, 2005   by _____
                                Jennifer Newell